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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,325	05/20/2005	Torben Dalgaard	7425114-9	3667

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ROBERTS, MLOTKOWSKI & HOBBS  
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MCLEAN, VA 22102-8064

EXAMINER
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MALLARI, PATRICIA C

ART UNIT	PAPER NUMBER
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3735

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/502,325

Applicant(s)

DALGAARD ET AL.

Examiner

Patricia C. Mallari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12, 13, 19, 22, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 7-11, 14-18, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is a final Office action. Any new grounds of rejection were necessitated by the applicants' amendments to the claims.

#### ***Claim Objections***

Claims 1, 3, 21, and 22 are objected to because of the following informalities:

On the last line of claim 1, "the lower end" should be replaced with "the lower end of such shell part".

On line 2 of claim 3, "the microphone signal" should be replaced with "a signal from the microphone means".

On line 2 of claim 21, "joint support" should be replaced with "the joint support".

On line 2 of claim 22, "joint support" should be replaced with "the joint support".

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 12, 13, 19, 22, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/0107450 to Ogura in view of Patent No. 4,790,325 to Lee. Ogura teaches an apparatus for measuring

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blood pressure comprising a generally tubular constrictable sleeve or cuff 18 for a limb of a person, a source for fluid pressure 38, a detector 34 for providing measurements of slowly varying static pressure in said sleeve or cuff, and microphone means 20, 26, 28 adapted for being arranged, in use, in proximity to an artery (see entire document, especially fig. 1; paragraphs 29-32, 42 and 43 of Ogura). The microphone means comprises a linear array of microphone elements 28, 32 disposed on a joint support, which emulates a universal joint (see entire document, especially fig. 2; paragraphs 30, 31, 36, 42, 43, 54, and 58 of Ogura). The applicants' specification discloses a separate air chamber fitted between the cuff and microphone array as being an example of a joint support that emulates a universal joint. Ogura's describes such an air chamber 20 fitted between the cuff 18 and the microphone array 28. Ogura lacks the cuff being at least partly enclosed in two essentially concave shell parts displaying a stiffness in an axial direction wherein, the two shell parts being openable against a restoring force, wherein the joint support is in one shell part essentially perpendicular to the longitudinal axis of the shell part and near the lower end.

However, Lee teaches an apparatus for measuring blood pressure comprising a generally tubular constrictable sleeve or cuff 360a, b which is at least partly enclosed in two essentially concave shell parts 352, 356 displaying a stiffness in an axial direction and being openable against a restoring force (see entire document, especially figs. 5-9; col. 9, line 65-col. 10, line 45 of Lee). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the construction of the shells and cuff of Lee with the apparatus of Ogura in order to enable the blood pressure

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apparatus to be usable by a patient without an attendant, without training and only minimal collaboration by the patient (see entire document, especially col. 8, lines 42-51; col. 9, lines 7-23 of Lee). It is noted that the combination of Ogura and Lee would result in the joint support of Ogura being located in one shell part essentially perpendicular to the longitudinal axis of the shell part near the lower end.

Regarding claim 2, signal selection means of the diversity reception type are used to select the microphone 32 that provides the best signal-to-noise ratio (see entire document, especially paragraph 42 of Ogura), wherein such signal-to-noise ratio is determined by the element outputting the filtered signal SM having the greater amplitude.

Regarding claim 12, the shell structure displays resilience in the circumferential direction (see entire document, especially figs. 5-9; col. 9, line 65-col. 10, line 45 of Lee).

Regarding claim 13, a hinge 358 is a continuous resilient part joining the shell parts (see entire document, especially figs. 6 & 7; col. 10, lines 9-17 of Lee).

Regarding claim 19, the constrictable sleeve or cuff forms an inner lining to the shell parts, providing an inflatable main air chamber (see entire document, especially figs. 6, 7; col. 10, lines 4-9 of Lee).

Regarding claim 22, the joint support emulating a universal joint is a separate air chamber fitted between the cuff and the microphone array (see entire document, especially figs. 1 & 2 of Ogura).

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Regarding claims 25 and 26, the sleeve or cuff is adapted to fit the arm of a person (see entire document, especially fig. 1; paragraphs 61 and 63 of Ogura; figs. 5, 6, and 9; col. 9, lines 7-24 of Lee). The sleeve or cuff is also adapted to fit the leg of a person, wherein a cuff sized and shaped to fit the arm of a person may be of appropriate size and shape to fit the leg of another person.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent NO. 4,058,117 to Kaspari et al. in view of US Patent Application Publication No. 2002/0107450 to Ogura and US Patent No. 4,790,325 to Lee. Kaspari teaches a blood pressure measuring apparatus comprising a generally tubular constrictable sleeve or cuff 21 for a limb of a person, a source for fluid pressure 80, a detector 83 for providing measurements of slowly varying static pressure in said sleeve or cuff, and microphone means 25, 70 adapted for being arranged, in use, in proximity to an artery (see entire document, especially figs. 1, 2, and 3a; col. 3, lines 45-67; col. 4, lines 48-60; col. 5, lines 4-31 of Kaspari). The microphone signal is amplified and made available to an electroacoustic converter for enabling listening to the signal, wherein the signal is output via a built-in speaker in the apparatus (see entire document, especially figs. 1, 3a, & 3b of Kaspari). Kaspari lacks the cuff being at least partly enclosed in two essentially concave shell parts displaying a stiffness in an axial direction, said shell parts being openable against a restoring force, and the microphone means comprising a linear array of microphone elements disposed on a joint support which emulates a

universal joint in one shell part essentially perpendicular to the longitudinal axis of such shell part and near the lower end.

However, Ogura teaches an apparatus for measuring blood pressure comprising a generally tubular constrictable sleeve or cuff 18 for a limb of a person, a source for fluid pressure 38, and microphone means 20, 26, 28 adapted for being arranged, in use, in proximity to an artery (see entire document, especially fig. 1; paragraphs 29-32, 42 and 43 of Ogura). The microphone means comprises a linear array of microphone elements 28, 32 disposed on a joint support, which emulates a universal joint (see entire document, especially fig. 2; paragraphs 30, 31, 36, 42, 43, 54, and 58 of Ogura). The applicants' specification discloses a separate air chamber fitted between the cuff and microphone array as being an example of a joint support that emulates a universal joint. Ogura's describes such an air chamber 20 fitted between the cuff 18 and the microphone array 28. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the microphone means of Ogura as that of the apparatus of Kaspari, as it would merely be the substitution of one known microphone means for another. Kaspari, as modified, lacks the cuff being at least partly enclosed in two essentially concave shell parts displaying a stiffness in an axial direction wherein, the two shell parts being openable against a restoring force, wherein the joint support is in one shell part essentially perpendicular to the longitudinal axis of the shell part and near the lower end.

However, Lee teaches an apparatus for measuring blood pressure comprising a generally tubular constrictable sleeve or cuff 360a, b which is at least partly enclosed in

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two essentially concave shell parts 352, 356 displaying a stiffness in an axial direction and being openable against a restoring force (see entire document, especially figs. 5-9; col. 9, line 65-col. 10, line 45 of Lee). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the construction of the shells and cuff of Lee with the apparatus of Kaspari, as modified, in order to facilitate placement of the cuff on the user (see entire document, especially col. 8, lines 42-51; col. 9, lines 7-23 of Lee). It is noted that the combination of Kaspari, Ogura, and Lee would result in the joint support being located in one shell part essentially perpendicular to the longitudinal axis of the shell part near the lower end.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaspari in view of Ogura and Lee, as applied to claims 3 and 4, above, and further in view of US Patent No. 4,248,241 to Tacchi. Kaspari, as modified, teaches the signal being output to earpieces ("PHONES" in fig. 3B), which earpieces are certainly capable of being worn by a physician or other user. Kaspari teaches the signal being output via wired link rather than wireless link to a receiver connected to the earpieces. However, Tacchi teaches a blood pressure measuring apparatus wherein the signal from the microphone means is output via a wireless link to a receiver connected to earpieces adapted to be worn, in use, by an auscultating physician (see entire document, especially figs. 4-6; col. 6, lines 34-45; col. 8, line 63-col. 9, line 14 of Tacchi). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the means for wireless transmission of the signal of Tacchi in place of the means for wired

transmission of Kaspari, as modified, since they are shown to be functionally equivalent means for transmitting a signal to earpieces.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,031,630 to Hirano et al. in view of US Patent Application Publication No. 2002/0107450 to Ogura and US Patent NO. 4,790,325 to Lee. Hirano teaches a blood pressure measuring apparatus comprising a generally tubular constrictable sleeve or cuff 10 for a limb of a person, a source 16 for fluid pressure, a detector 36 for providing measurements of slowly varying static pressures in said sleeve or cuff, and microphone means 18, 20, 22, 24, 26, 28 adapted for being arranged, in use, in proximity to an artery. The microphone means comprises a linear array of microphone elements 18, 20, 22, 24, 26, 28 (see entire document, especially fig. 1; col. 3, lines 25-53; col. 4, lines 43-53; col. 7, lines 60-66 of Hirano). Signal processing means 34 combines information derived from measurements of slowly varying static pressures with information from the microphone means in order to obtain a numerical value for a blood pressure (see entire document, especially col. 6, lines 16-30 of Hirano). Hirano lacks the cuff being at least partly enclosed in two essentially concave shell parts displaying stiffness in an axial direction and the microphone elements being disposed on a joint support which emulates a universal joint in one shell part essentially perpendicular to the longitudinal axis of the shell part and near the lower end.

However, Ogura teaches an apparatus for measuring blood pressure comprising a generally tubular constrictable sleeve or cuff 18 for a limb of a person and microphone

means 20, 26, 28 adapted for being arranged, in use, in proximity to an artery (see entire document, especially fig. 1; paragraphs 29-32, 42 and 43 of Ogura). The microphone means comprises a linear array of microphone elements 28, 32 disposed on a joint support, which emulates a universal joint (see entire document, especially fig. 2; paragraphs 30, 31, 36, 42, 43, 54, and 58 of Ogura). The applicants' specification discloses a separate air chamber fitted between the cuff and microphone array as being an example of a joint support that emulates a universal joint. Ogura's describes such an air chamber 20 fitted between the cuff 18 and the microphone array 28. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the microphone means of Ogura as that of Hirano, as it would merely be the substitution of one known microphone means for another. Hirano, as modified lacks the cuff being at least partly enclosed in two essentially concave shell parts displaying a stiffness in an axial direction wherein, the two shell parts being openable against a restoring force, wherein the joint support is in one shell part essentially perpendicular to the longitudinal axis of the shell part and near the lower end.

However, Lee teaches an apparatus for measuring blood pressure comprising a generally tubular constrictable sleeve or cuff 360a, b which is at least partly enclosed in two essentially concave shell parts 352, 356 displaying a stiffness in an axial direction and being openable against a restoring force (see entire document, especially figs. 5-9; col. 9, line 65-col. 10, line 45 of Lee). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the construction of the shells and cuff of Lee with the apparatus of Hirano, as modified, in order to enable the blood

pressure apparatus to be usable by a patient without an attendant, without training and only minimal collaboration by the patient (see entire document, especially col. 8, lines 42-51; col. 9, lines 7-23 of Lee). It is noted that the combination of Hirano with Ogura and Lee would result in the joint support being located in one shell part essentially perpendicular to the longitudinal axis of the shell part near the lower end.

### ***Response to Arguments***

The rejections under 35 U.S.C. 112, 1<sup>st</sup> paragraph and 35 U.S.C. 101 have been withdrawn in light of the applicants' amendments to the claims.

### ***Allowable Subject Matter***

Claims 7-111, 14-18, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7-10 and 20, the prior art of record fails to teach or fairly suggest an apparatus for measuring blood pressure wherein an inelastic strap is attached to one shell part to close a gap between the shell parts, in combination with all of the other limitations of the claims.

Regarding claims 11 and 14-18, the prior art of record fails to teach or fairly suggest an apparatus for measuring blood pressure wherein the shells are fitted on

hinge parts connected to handle parts operable by one hand, in combination with all of the other limitations of the claims.

Regarding claim 21, the prior art of record fails to teach or fairly suggest an apparatus for measuring blood pressure, wherein the joint support emulates a universal joint by means of a foam pad, in combination with all of the other limitations of the claim.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia C. Mallari whose telephone number is (571)

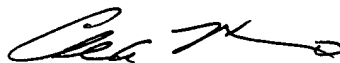
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272-4729. The examiner can normally be reached on Monday-Friday 10:00 am-6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on (571) 272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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